

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Original Claim) A method of generating a progressively corrected scan signal, the progressively corrected scan signal having a magnitude independent of spectral reflectance from a background near a target, comprising:
generating a baseline signal by sampling light reflected from the target and background before transmitting a light scan at the target;
generating a detected signal by receiving light reflected from the target and background while transmitting the light scan at the target; and
subtracting the baseline signal from the detected signal to form the progressively corrected scan signal.
2. (Original Claim) The method of claim 1 wherein the target comprises a barcode.
3. (Original Claim) The method of claim 1 wherein the target comprises a sample vessel.
4. (Original Claim) The method of claim 1 wherein the transmitting the light scan at the target comprises transmitting a laser beam at the target.
5. (Original Claim) The method of claim 4 wherein the transmitting a laser beam at the target comprises transmitting a red laser beam at the target.
6. (Original Claim) The method of claim 1 wherein the subtracting step comprises inverting the baseline signal and summing the detected and inverted baseline signals.
7. (Original Claim) The method of claim 6 further comprising passing the detected signal through a first resistor and the inverted baseline signal through a second resistor before the summing.
8. (Original Claim) The method of claim 7 wherein the ratio of the first resistor to the second resistor comprises the ratio 1:3.
9. (Original Claim) The method of claim 8 further comprising amplifying the baseline signal by a factor of three before the inverting.
10. (Original Claim) The method of claim 1 further comprising generating a scan synchronization signal immediately before transmitting the light scan, and generating the baseline signal immediately after generating the scan synchronization signal.

11. (Original Claim) A circuit for producing an average level independent output signal from an input signal subject to fluctuations in average level, comprising:
a sample signal generator comprising an input and an output, the sample signal generator input receiving a sample timing signal;
a sample-and-hold circuit comprising an input, an output, and a sample trigger, the sample-and-hold input receiving the input signal subject to fluctuations in average level, the sample trigger operatively coupled to the sample signal generator output; and
a voltage amplifier comprising an input and an output, the amplifier input operatively coupled to the sample-and-hold output, the amplifier output operatively coupled to the sample-and-hold input.
12. (Original Claim) The circuit of claim 11 wherein the input signal comprises an optical detector output signal.
13. (Original Claim) The circuit of claim 12 wherein the detector output signal represents light reflected from a target and a background during a scan period.
14. (Original Claim) The circuit of claim 13 wherein the target comprises a barcode.
15. (Original Claim) The circuit of claim 13 wherein the target comprises a sample vessel.
16. (Original Claim) The circuit of claim 11 wherein the output signal has a baseline of about zero volts.
17. (Original Claim) The circuit of claim 11 wherein the sample signal generator comprises a differentiator and a bipolar transistor, the differentiator comprising an input and an output, the differentiator input comprising the sample signal generator input, the differentiator output operatively coupled to the bipolar transistor.
18. (Original Claim) The circuit of claim 17 wherein the differentiator comprises a capacitor and a resistor, the capacitor comprising an input and an output, the resistor comprising a first and a second terminal, the capacitor input comprising the sample signal generator input, the capacitor output operatively coupled to the first resistor terminal to form the differentiator output.
19. (Currently Amended) The circuit of claim 17 wherein the bipolar transistor comprises a NPN PNP bipolar transistor, the NPN PNP bipolar transistor comprising a base and a collector, the transistor base operatively coupled to the differentiator output, the transistor

collector comprising the sample signal generator output.

20. (Original Claim) The circuit of claim 19 wherein the transistor further comprises an emitter, the emitter operatively coupled to a positive DC voltage source.

21. (Original Claim) The circuit of claim 11 wherein the sample-and-hold input comprises a positive and a reference input, the reference sample-and-hold input operatively coupled to ground, the positive sample-and-hold input receiving the input signal subject to fluctuations in average level.

22. (Original Claim) The circuit of claim 11 wherein the amplifier input comprises a positive and a negative input, the positive amplifier input operatively coupled to ground, the negative amplifier input operatively coupled to the sample-and-hold output.

23. (Original Claim) The circuit of claim 11 wherein the amplifier output is operatively coupled to the sample-and-hold input via a first and a second resistor in series, the average level independent output signal being generated at a point between the first and second resistors.

24. (Original Claim) The circuit of claim 23 wherein the ratio of the first resistor to the second resistor comprises 3:1.

25. (Currently Amended) A system for generating and transforming information contained in light reflected from an optical scan transmitted at a target in the vicinity of a background to information contained in an electrical signal, comprising:

an optical timing detector for producing a scan synchronization signal, a laser for producing the optical scan in response to the scan synchronization signal, an optically sensitive scan detector for receiving and converting the reflected light into an electrical detector output signal, the detector output signal being subject to variations in DC offset due to spectral reflectance from the background, and a coupling circuit for presenting the scan detector output signal to a subsequent circuit;

the coupling circuit comprising a sample signal generator, the sample signal generator comprising an input and an output, the sample signal generator input receiving a sample timing signal, a sample-and-hold circuit, the sample-and-hold comprising an input, an output, and a sample trigger, the sample-and-hold input receiving the scan detector output signal, the sample trigger operatively coupled to the sample signal generator output, and a voltage amplifier, the amplifier comprising an input and an output, the amplifier input operatively coupled to the sample-and-hold output, the amplifier output operatively coupled to the sample-and-hold input.

26. (Original Claim) The circuit of claim 25 wherein the sample timing signal comprises the scan synchronization signal.

27. (Original Claim) The circuit of claim 25 wherein the amplifier output signal has a baseline of about zero volts.

28. (Original Claim) The circuit of claim 25 wherein the sample signal generator comprises a differentiator and a bipolar transistor, the differentiator comprising an input and an output, the differentiator input comprising the sample signal generator input, the differentiator output operatively coupled to the bipolar transistor.

29. (Original Claim) The circuit of claim 28 wherein the differentiator comprises a capacitor and a resistor, the capacitor comprising an input and an output, the resistor comprising a first and a second terminal, the capacitor input comprising the sample signal generator input, the capacitor output operatively coupled to the first resistor terminal to form the differentiator output.

30. (Currently Amended) The circuit of claim of 29 wherein the bipolar transistor comprises a NPN PNP bipolar transistor, the NPN PNP bipolar transistor comprising a base and a collector, the transistor base operatively coupled to the differentiator output, the transistor collector comprising the sample signal generator output.

31. (Original Claim) The circuit of claim 30 wherein the transistor further comprises an emitter, the emitter operatively coupled to a positive DC voltage source.

32. (Original Claim) The circuit of claim 25 wherein the sample-and-hold input comprises a positive and a reference input, the reference sample-and-hold input operatively coupled to ground, the positive sample-and-hold input receiving the scan detector output input signal.

33. (Original Claim) The circuit of claim 25 wherein the amplifier input comprises a positive and a negative input, the positive amplifier input operatively coupled to ground, the negative amplifier input operatively coupled to the sample-and-hold output.

34. (Original Claim) The circuit of claim 25 wherein the amplifier output is operatively coupled to the sample-and-hold input via a first and a second resistor in series.

35. (Original Claim) The circuit of claim 34 wherein the ratio of the first resistor to the second resistor comprises 3:1.